

### Patent Claims

1. Process for the manufacture of chlorotris(triphenylphosphine)-rhodium(I) by means of causing a reaction of  $\text{RhCl}_3$  solution with triphenylphosphine, subsequently cooling down and filtering the crystalline precipitate obtained characterized in that the mixture of the reactants is treated in such a way that
  - A is heated up to about  $30^\circ\text{C}$  in an initial stage,
  - B is heated up from 30 to about  $75^\circ\text{C}$  in a second stage,
  - C is maintained at 80 to  $110^\circ\text{C}$ .
  
2. Process for the manufacture of chlorotris(triphenylphosphine)-rhodium(I) by means of causing a reaction of  $\text{RhCl}_3$  solution with triphenylphosphine, subsequently cooling down and filtering the crystalline precipitate obtained characterized in that a 30 to  $40^\circ\text{C}$  warm mixture of reactants is treated in such a way that
  - B is heated up from about  $30^\circ\text{C}$  to  $40^\circ\text{C}$  to about  $75^\circ\text{C}$ ,
  - C is maintained at 80 to  $110^\circ\text{C}$ .
  
3. Process for the manufacture of chlorotris(triphenylphosphine)-rhodium(I) characterized in that
  - a solution of  $\text{RhCl}_3$  is manufactured in water or an  $\text{RhCl}_3$  solution is prepared from a recycling process,
  - a solution, if necessary under cooling with a  $\text{C}_2\text{-C}_5$  alcohol, is combined with alcohol,
  - triphenylphosphine, if necessary under cooling, is added in excess.
  - A in an initial stage the suspension obtained is heated up from about 5 to 20 to about  $30^\circ\text{C}$ ,
  - B further in a second stage heated up from about 30 to about  $75^\circ\text{C}$ ,
  - C is maintained at 80 to  $110^\circ\text{C}$ .
  - the solution obtained is cooled down,
  - the crystals precipitated out are filtered, washed and subsequently dried.

4. Process for the manufacture of tris(triphenylphosphin)-rhodium(I) chlorotris(triphenylphosphine)-rhodium(I) characterized in that
- a solution of  $\text{RhCl}_3$  is manufactured in water or an  $\text{RhCl}_3$  solution is prepared from a recycling process,
  - isopropanol is produced under a protective inert gas,
  - the  $\text{RhCl}_3$  solution is added
  - triphenylphosphin is added in excess as an alcoholic solution or suspension
- A the mixture obtained is heated up from about 20 to about 30°C in an initial stage,
- B further in a second stage is heated up from about 30 to about 75°C,
- C is boiled under reflux at 80 to 110°C.
- the solution obtained is cooled down,
  - the crystals precipitated out are filtered, washed with alcohol and/or water and/or petroleum ether and subsequently dried.
5. Process pursuant to Claims 1 to 4 characterized in that the stages last: A, about ½ to 1 h; B, 1 to 4 h and C, about ½ to 1 h.